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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/720,744	06/11/2001	Wilmert De Bosscher	522-1730	5005

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EXAMINER

DUNWOODY, AARON M

ART UNIT PAPER NUMBER

3679

DATE MAILED: 10/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/720,744

Applicant(s)

BOSSCHER ET AL.

Examiner

Aaron M Dunwoody

Art Unit

3679

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "25" and "3" have both been used to designate clamping ring. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "37" has been used to designate both an integral ring and a second end portion. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 13-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims fail to conform with current U.S. practices, and they appear to be a literal translation into English from a foreign document and are replete with 35 U.S.C. 112, second paragraph, and idiomatic errors; examples of which, but not limited to, are:

Claims 13 and 20 recite the limitation "the inner space" in lines 1-2. There is insufficient antecedent basis for this limitation in the claims.

Claims 13 and 16, the word "means" is preceded by the word(s) "by" in an attempt to use a "means" clause to recite a claim element as a means for performing a specified function. However, since no function is specified by the word(s) preceding "means," it is impossible to determine the equivalents of the element, as required by 35 U.S.C. 112, sixth paragraph. See *Ex parte Klumb*, 159 USPQ 694 (Bd. App. 1967).

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claims 17 and 24 recite the broad recitation 50% or less, and the claims also recite preferably 30% or less, more preferably 20% or less which is the narrower statement of the range/limitation.

Claim 20 recites, "...said abutment ring and being adapted to positively, solidly and axially clamp the abutment ring..."; however, it is unclear to the examiner how the abutment ring can positively, solidly and axially clamp its self.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 13-31 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by US patent 4779901, Halling.

In regards to claim 13, as best understood, in figures 1 and 4, Halling discloses a vacuum tight coupling for end portions of two tubular sections, the size of the inner space of a first end portion being smaller than that of a second end portion, the second end portion having a flange extremity axially slidable over the first end portion to abut the flange extremity against a peripheral outer abutment ring on the first end portion, the coupling comprising at least one sealing ring between the end portions in their overlapping contact area and further comprising a clamping ring with a substantially cylindrical outer surface and being composed of two substantially equal halves, each clamp half having a semi-circular or U-shaped cross section with an inwardly oriented recess, the recess enclosing the flange extremity and the abutment ring and being adapted to positively, solidly and axially clamp the abutment ring against the flange extremity, the two ring halves being fixed to each other at their extremities by means of

Art Unit: 3679

fixing means comprising in at least one place bolting means, the axis of which is perpendicular to the longitudinal axis of the coupled tubular sections and substantially tangential to the clamping ring periphery.

In regards to claim 14, as best understood, Halling discloses the flange extremity being a separate ring.

In regards to claim 15, as best understood, Halling discloses the ring halves, besides the bolting means for fixing their extremities in one place comprising pivoting means for fixing them in their opposite extremities.

In regards to claim 16, as best understood, Halling discloses the first end portion comprising a tubular insert coupled between a tubular section and the second end portion, and wherein the insert end facing the tubular section is a ring which can slide axially over the tubular section whereas the opposite insert end is a ring over which the second end portion can slide.

In regards to claim 17, as best understood, Halling discloses the length of the overlap portion between the first and second tube portions being 50% or less, preferably 30% or less, more preferably 20 % or less of the inner diameter of the first portion.

In regards to claim 18, as best understood, Halling discloses the length of the overlap portion between the first and second end portions being 5 % or more of the inner diameter of the first portion.

In regards to claim 14, as best understood, Halling discloses the coupling being a high vacuum or ultra-high vacuum coupling.

In regards to claim 20, as best understood, Halling discloses a coupling for a cylindrical sputtering target for end portions of two tubular sections, the size of the inner space of a first end portion being smaller than that of a second end portion, the second end portion having a flange extremity axially slidable over the first end portion to abut the flange extremity against a peripheral outer abutment ring on the first end portion, the coupling comprising at least one sealing ring between the end portions in their overlapping contact area and further comprising a clamping ring with a substantially cylindrical outer surface and being composed of two substantially equal halves, each clamp half having a semi-circular or U-shaped cross section with an inwardly oriented recess, the recess enclosing the flange extremity and the abutment ring and being adapted to positively, solidly and axially clamp the abutment ring against the flange extremity, the two ring halves being fixed to each other at their extremities by means of fixing means comprising in at least one place bolting means, the axis of which is perpendicular to the longitudinal axis of the coupled tubular sections and substantially tangential to the clamping ring periphery.

In regards to claim 21, as best understood, Halling discloses the flange extremity being a separate ring.

In regards to claim 22, as best understood, Halling discloses the ring halves, besides the bolting means for fixing their extremities in one place comprise pivoting means for fixing them in their opposite extremities.

In regards to claim 23, as best understood, Halling discloses the first end position comprising a tubular insert coupled between a tubular section and the second end

Art Unit: 3679

portion, and wherein the insert end facing the tubular section is a ring which can slide axially over the tubular section whereas the opposite insert end is a ring over which the second end portion can slide.

In regards to claim 24, as best understood, Halling discloses the length of the overlap portion between the first and second tube portions being 50% or less, preferably 30 % or less, more preferably 20 % or less of the inner diameter of the first portion.

In regards to claim 25, as best understood, Halling discloses the length of the overlap portion between the first and second end portions being 5 % or more of the inner diameter of the first portion.

In regards to claim 26, as best understood, Halling discloses the coupling being a high vacuum or ultra-high vacuum coupling.

In regards to claim 27, as best understood, Halling discloses the fixing means of the clamping ring being located on the side of the coupling remote from the sputtering target.

In regards to claim 28, as best understood, Halling discloses an anti-arcing element.

In regards to claim 29, as best understood, Halling discloses the anti-arcing element being attached to a surface of the clamping ring on the same side as the sputtering target for preventing arcing.

In regards to claim 30, as best understood, Halling discloses the anti-arcing element being conductive or insulating.



Art Unit: 3679

In regards to claim 31, as best understood, Halling discloses at least one groove being provided between the anti-arc element and the clamping ring.

In regards to claim 32, as best understood, Halling discloses the anti-arc element touching a surface of the sputtering target.

Claims 13-31 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by US patent 3398980, Hill.

In regards to claim 13, as best understood, in figures 1 and 2, Hill discloses a vacuum tight coupling for end portions of two tubular sections, the size of the inner space of a first end portion being smaller than that of a second end portion, the second end portion having a flange extremity axially slidable over the first end portion to abut the flange extremity against a peripheral outer abutment ring on the first end portion, the coupling comprising at least one sealing ring between the end portions in their overlapping contact area and further comprising a clamping ring with a substantially cylindrical outer surface and being composed of two substantially equal halves, each clamp half having a semi-circular or U-shaped cross section with an inwardly oriented recess, the recess enclosing the flange extremity and the abutment ring and being adapted to positively, solidly and axially clamp the abutment ring against the flange extremity, the two ring halves being fixed to each other at their extremities by means of fixing means comprising in at least one place bolting means, the axis of which is perpendicular to the longitudinal axis of the coupled tubular sections and substantially tangential to the clamping ring periphery.

In regards to claim 14, as best understood, Hill discloses the flange extremity being a separate ring.

In regards to claim 15, as best understood, Hill discloses the ring halves, besides the bolting means for fixing their extremities in one place comprising pivoting means for fixing them in their opposite extremities.

In regards to claim 16, as best understood, Hill discloses the first end portion comprising a tubular insert coupled between a tubular section and the second end portion, and wherein the insert end facing the tubular section is a ring which can slide axially over the tubular section whereas the opposite insert end is a ring over which the second end portion can slide.

In regards to claim 17, as best understood, Hill discloses the length of the overlap portion between the first and second tube portions being 50% or less, preferably 30% or less, more preferably 20 % or less of the inner diameter of the first portion.

In regards to claim 18, as best understood, Hill discloses the length of the overlap portion between the first and second end portions being 5 % or more of the inner diameter of the first portion.

In regards to claim 14, as best understood, Hill discloses the coupling being a high vacuum or ultra-high vacuum coupling.

In regards to claim 20, as best understood, Hill discloses a coupling for a cylindrical sputtering target for end portions of two tubular sections, the size of the inner space of a first end portion being smaller than that of a second end portion, the second end portion having a flange extremity axially slidable over the first end portion to abut

the flange extremity against a peripheral outer abutment ring on the first end portion, the coupling comprising at least one sealing ring between the end portions in their overlapping contact area and further comprising a clamping ring with a substantially cylindrical outer surface and being composed of two substantially equal halves, each clamp half having a semi-circular or U-shaped cross section with an inwardly oriented recess, the recess enclosing the flange extremity and the abutment ring and being adapted to positively, solidly and axially clamp the abutment ring against the flange extremity, the two ring halves being fixed to each other at their extremities by means of fixing means comprising in at least one place bolting means, the axis of which is perpendicular to the longitudinal axis of the coupled tubular sections and substantially tangential to the clamping ring periphery.

In regards to claim 21, as best understood, Hill discloses the flange extremity being a separate ring.

In regards to claim 22, as best understood, Hill discloses the ring halves, besides the bolting means for fixing their extremities in one place comprise pivoting means for fixing them in their opposite extremities.

In regards to claim 23, as best understood, Hill discloses the first end position comprising a tubular insert coupled between a tubular section and the second end portion, and wherein the insert end facing the tubular section is a ring which can slide axially over the tubular section whereas the opposite insert end is a ring over which the second end portion can slide.

In regards to claim 24, as best understood, Hill discloses the length of the overlap portion between the first and second tube portions being 50% or less, preferably 30 % or less, more preferably 20 % or less of the inner diameter of the first portion.

In regards to claim 25, as best understood, Hill discloses the length of the overlap portion between the first and second end portions being 5 % or more of the inner diameter of the first portion.

In regards to claim 26, as best understood, Hill discloses the coupling being a high vacuum or ultra-high vacuum coupling.

In regards to claim 27, as best understood, Hill discloses the fixing means of the clamping ring being located on the side of the coupling remote from the sputtering target.

In regards to claim 28, as best understood, Hill discloses an anti-arcing element.

In regards to claim 29, as best understood, Hill discloses the anti-arcing element being attached to a surface of the clamping ring on the same side as the sputtering target for preventing arcing.

In regards to claim 30, as best understood, Hill discloses the anti-arcing element being conductive or insulating.

In regards to claim 31, as best understood, Hill discloses at least one groove being provided between the anti-arcing element and the clamping ring.

In regards to claim 32, as best understood, Hill discloses the anti-arcing element touching a surface of the sputtering target.

Art Unit: 3679

Claims 13-31 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by US patent 4486037, Shotbolt.

In regards to claim 13, as best understood, in figures 1 and 2, Shotbolt discloses a vacuum tight coupling for end portions of two tubular sections, the size of the inner space of a first end portion being smaller than that of a second end portion, the second end portion having a flange extremity axially slidable over the first end portion to abut the flange extremity against a peripheral outer abutment ring on the first end portion, the coupling comprising at least one sealing ring between the end portions in their overlapping contact area and further comprising a clamping ring with a substantially cylindrical outer surface and being composed of two substantially equal halves, each clamp half having a semi-circular or U-shaped cross section with an inwardly oriented recess, the recess enclosing the flange extremity and the abutment ring and being adapted to positively, solidly and axially clamp the abutment ring against the flange extremity, the two ring halves being fixed to each other at their extremities by means of fixing means comprising in at least one place bolting means, the axis of which is perpendicular to the longitudinal axis of the coupled tubular sections and substantially tangential to the clamping ring periphery.

In regards to claim 14, as best understood, Shotbolt discloses the flange extremity being a separate ring.

In regards to claim 15, as best understood, Shotbolt discloses the ring halves, besides the bolting means for fixing their extremities in one place comprising pivoting means for fixing them in their opposite extremities.

In regards to claim 16, as best understood, Shotbolt discloses the first end portion comprising a tubular insert coupled between a tubular section and the second end portion, and wherein the insert end facing the tubular section is a ring which can slide axially over the tubular section whereas the opposite insert end is a ring over which the second end portion can slide.

In regards to claim 17, as best understood, Shotbolt discloses the length of the overlap portion between the first and second tube portions being 50% or less, preferably 30% or less, more preferably 20 % or less of the inner diameter of the first portion.

In regards to claim 18, as best understood, Shotbolt discloses the length of the overlap portion between the first and second end portions being 5 % or more of the inner diameter of the first portion.

In regards to claim 14, as best understood, Shotbolt discloses the coupling being a high vacuum or ultra-high vacuum coupling.

In regards to claim 20, as best understood, Shotbolt discloses a coupling for a cylindrical sputtering target for end portions of two tubular sections, the size of the inner space of a first end portion being smaller than that of a second end portion, the second end portion having a flange extremity axially slidable over the first end portion to abut the flange extremity against a peripheral outer abutment ring on the first end portion, the coupling comprising at least one sealing ring between the end portions in their overlapping contact area and further comprising a clamping ring with a substantially cylindrical outer surface and being composed of two substantially equal halves, each clamp half having a semi-circular or U-shaped cross section with an inwardly oriented

Art Unit: 3679

recess, the recess enclosing the flange extremity and the abutment ring and being adapted to positively, solidly and axially clamp the abutment ring against the flange extremity, the two ring halves being fixed to each other at their extremities by means of fixing means comprising in at least one place bolting means, the axis of which is perpendicular to the longitudinal axis of the coupled tubular sections and substantially tangential to the clamping ring periphery.

In regards to claim 21, as best understood, Shotbolt discloses the flange extremity being a separate ring.

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In regards to claim 23, as best understood, Shotbolt discloses the first end position comprising a tubular insert coupled between a tubular section and the second end portion, and wherein the insert end facing the tubular section is a ring which can slide axially over the tubular section whereas the opposite insert end is a ring over which the second end portion can slide.

In regards to claim 24, as best understood, Shotbolt discloses the length of the overlap portion between the first and second tube portions being 50% or less, preferably 30 % or less, more preferably 20 % or less of the inner diameter of the first portion.

In regards to claim 25, as best understood, Shotbolt discloses the length of the overlap portion between the first and second end portions being 5 % or more of the inner diameter of the first portion.

, Art Unit: 3679

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In regards to claim 27, as best understood, Shotbolt discloses the fixing means of the clamping ring being located on the side of the coupling remote from the sputtering target.

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In regards to claim 30, as best understood, Shotbolt discloses the anti-arcing element being conductive or insulating.

In regards to claim 31, as best understood, Shotbolt discloses at least one groove being provided between the anti-arcing element and the clamping ring.

In regards to claim 32, as best understood, Shotbolt discloses the anti-arcing element touching a surface of the sputtering target.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron M Dunwoody whose telephone number is (703) 306-3436. The examiner can normally be reached on Monday - Friday between 7:30 am to 4:00 pm.



Art Unit: 3679

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne H Browne can be reached on (703) 308-1159. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9302 for regular communications and (703) 872-9327 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

.amd   
September 30, 2002

  
**Lynne H. Browne**  
**Supervisory Patent Examiner**  
**Technology Center 3670**